

ABSTRACT OF THE DISCLOSURE

A gas detector for detecting a fluoro gas species in a gaseous environment containing same, e.g., an effluent from a semiconductor processing tool that employs corrosive fluoro species such as HF, NF<sub>3</sub>, etc. for etch cleaning. The gas detector preferably employs an elongated nickel-containing gas sensor element that can be vertically mounted on a fluoro-resistant support structure. Since the nickel-containing gas sensor element is sensitive to the fluoro species and is also electrically conductive, it can function both as a sensing component and a heat source when elevated temperature sensing is required. Vertical mounting of such elongated gas sensor element on the support structure significantly improves the signal strength, reduces the response time, minimizes the footprint of the gas detector, and provides structural flexibility for accommodating thermal expansion/contraction of the elongated gas sensor element.